1. Rejection of Claim 7 under 35 U.S.C. § 112, ¶ 2

The Office Action rejects claim 7 under 35 U.S.C. § 112, ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter of the invention. The Office Action states:

> Claim 7 contains some subject matter in parentheses. It is not clear that the matter is or is not encompassed by the scope of the claim.

Applicants respectfully traverse the rejection because it is clear that the subject matter enclosed by the parentheses is encompassed by the scope of claim 7. Applicants remind the Examiner that the presence of parentheses within a claim does not automatically lead to indefiniteness of the claimed subject matter.

The recitation of "in which 0.5 weight percent or less of organic salts to the weight of the metal salts are contained" is clearly encompassed by claim 7. The parentheses of claim 7 particularly and distinctly define the invention as is required under the statute.

It is noted that a statutory basis for rejecting the claims for containing parentheses is improper. An objection rather than a rejection is more appropriate with respect to parentheses within a

claim.

Since it is very clear that the contents of the parentheses are encompassed within the scope of the claim and since the language of claim 7 particularly points out and distinctly claims the subject matter of the invention, Applicants respectfully request the Examiner to withdraw the rejection under § 112, ¶ 2.

2. Rejection of Claims 1-3 and 6 under 35 U.S.C. § 103(a)

The Office Action rejects claims 1-3 and 6 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,600,743 ("Shizuki et al.") in view of U.S. Patent No. 6,528,567 ("Arai et al."). The Office Action states:

> Shizuki discloses an antistatic fiber obtained from a thermoplastic polymer containing polyoxyalkylene glycol or its derivatives in an amount of not less than 0.5% by wt. (abstract). Suitable glycols are listed in column 5, line 33 to column 6, line 24, one of them being copolymer of polytetramethylene glycol (column 5, lines 40-41). Some optional components that can be added are sulfonates (column 4, line 55 to column 5, line 12).
>
> Shizuki fails to disclose the claimed (sulfonate) salt.
>
> Arai uses potassium dodecyl benzenesulfonate as antistatic agent (column 10, lines 32-33).

> Therefore it would have been obvious to follow teachings of Shizuki and Arai and arrive at invention of above claims. It is noted that Shizuki does not mention anything about amount of inorganic salts in sulfonates. Nonetheless, it is known in the art that the amount of inorganic salts in an antistatic material should be low since larger amounts adversely affect antistatic characteristic due to their non-conductive behavior.

Applicants respectfully traverse the rejection because a *prima facie* case of obviousness has not been established. In particular, the sulfonates taught by Shizuki et al. are used to form the recurring units of polyester used as a fiber-forming thermoplastic polymer and therefore cannot be mixed together with polyoxyalkylene glycol or its derivative as in the present invention. See Shizuki et al. at col. 4, line 55 to col. 6, line 12. Moreover, one of ordinary skill in the art simply would not have had any motivation or suggestion to combine the references to arrive at the presently claimed invention due to the different uses of the fibers between Shizuki et al. and Arai et al.

Turning to the rule, the Federal Circuit held that a *prima facie* case of obviousness must establish: (1) some suggestion or motivation to modify the references; (2) a reasonable expectation of success; and (3) that the prior art references teach or suggest **all** the claimed limitations. Amgen, Inc. v. Chugai Pharm. Co., 18

USPQ2d 1016, 1023 (Fed. Cir. 1991); In re Fine, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); In re Wilson, 165 USPQ 494, 496 (C.C.P.A. 1970).

In the present application, the material for producing antistatic polyurethane elastic fiber is a **mixture** of

(i) 5 to 95 parts by weight of at least one salt selected from the group consisting of sulfonates having C_{8-30} hydrocarbon chain, sulfates having C_{8-30} hydrocarbon chain and phosphates having C_{8-50} hydrocarbon chain, and

(ii) 95 to 5 parts by weight of a starting material for producing polyurethane elastic fiber other than organic isocyanate.

However, Shizuki et al. fails to teach each and every limitation of the claimed invention. In particular, the sulfonates taught by Shizuki et al. are used to form the recurring units of polyester used as a fiber-forming thermoplastic polymer and therefore cannot be mixed together with polyoxyalkylene glycol or its derivative as in the present invention. See Shizuki et al. at col. 4, line 55 to col. 6, line 12. Although Shizuki et al. discloses an antistatic fiber obtained from a thermoplastic polymer containing polyoxyalkylene glycol ("POG") or its derivatives in an amount of not less than 0.5% by wt, the sulfonates disclosed in Col. 4, line 55 to Col. 6, line 12 of Shizuki et al. are used to

form the recurring units of a polyester used as a fiber-forming thermoplastic polymer. Therefore, the sulfonates of Shizuki et al. are not mixed with POG or its derivative as is done in the presently claimed mixture.

Moreover, the sulfonates disclosed by Shizuki et al. do not have a C_{8-30} hydrocarbon chain and are therefore very different from the sulfonates of the present invention. Although the POG disclosed by Shizuki et al. is contemplated within the scope of the presently claimed component (ii) of the present invention, a fiber produced from polyurethane, which in turn is produced from POG, does not have the requisite properties for a polyurethane elastic fiber such as elongation and elastic recovery. Therefore, fibers produced from polyurethane, which in turn are produced from POG cannot be used as elastic fibers.

Arai et al. also fails to teach the claimed invention even when combined with the Shizuki et al. reference. Arai et al. discloses an antistatic resin composition comprising (a) 7 to 100 parts by weight of a graft copolymer, (b) 0 to 93 parts by weight of a thermoplastic resin and (c) 0.1 to 5 parts by weight of an anionic surfactant. See Arai et al. Col. 2, lines 38-49. However, Arai et al. fails to provide any teachings regarding a fiber or polyurethane.

Moreover, there is no suggestion to combine Arai et al. with Shizuki et al. because Shizuki et al. merely discloses the use of a sulfonate which is different from the sulfonate used in the present invention for the production of a cationic dye-dyeable polyester. In other words, the presently claimed material for producing antistatic polyurethane elastic fiber cannot be made from the combination of the cited references. Arai et al. merely disclose an antistatic resin composition and Shizuki et al. merely discloses a cationic dye-dyeable polyester. One of ordinary skill in the art simply would not have had any motivation to combine the references to arrive at the presently claimed invention.

Accordingly, Applicants respectfully submit that the presently claimed invention is unobvious over the cited references and respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. § 103.

3. Rejection of Claim 4 under 35 U.S.C. § 103(a)

The Office Action rejects claim 4 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,600,743 ("Shizuki et al.") in view of U.S. Patent No. 6,528,567 ("Arai et al.") as applied to claim 1 above, and further in view of U.S. Patent No.

3,775,213 ("Dunay"). The Office Action states:

> Shizuki (together with Arai) does not mention spinning solvent (of instant claim 4).
>
> Dunay discloses production of insulative material from poly benzimidazole fiber using N,N-dimethyl formamide or N,N-dimethylacetamide as preferred solvents (column 4, lines 16-17).
>
> It would have been obvious to use solvents of Dunay in the preparation of fiber of Shizuki as the preferred solvents.

Applicants respectfully traverse the rejection because a *prima facie* case of obviousness has not been established over the independent claim 1. Therefore, the rejection of the dependent claim 4 is similarly traversed over the arguments as provided supra because all the limitations of the independent claim 1 are incorporated in the dependent claim 4.

Accordingly, Applicants respectfully submit that the presently claimed invention is unobvious over the combination of Shizuki et al., Arai et al. and Dunay and respectfully request reconsideration and withdrawal of the rejection of claim 4 under 35 U.S.C. § 103.

4. Rejection of Claim 5 under 35 U.S.C. § 103(a)

The Office Action rejects claim 5 under 35 U.S.C. § 103(a) as

being unpatentable over U.S. Patent No. 4,600,743 ("Shizuki et al.") in view of U.S. Patent No. 6,528,567 ("Arai et al.") as applied to claim 1 above, and further in view of U.S. Patent No. 5,954,062 ("Murata"). The Office Action states:

> Shizuki (together with Arai) does not mention the lubricant (of instant claim 5).
>
> Murata discloses artificial hair and its preparation wherein an amino-modified silicone lubricant is used (column 6, lines 6-8).
>
> Therefore, it would have been obvious to use the lubricant of Murata for the fiber of Shizuki in order to prevent fusion and intermixing of fibers.

Applicants respectfully traverse the rejection because a *prima facie* case of obviousness has not been established over the independent claim 1. Therefore, the rejection of the dependent claim 5 is similarly traversed over the arguments as provided supra because all the limitations of the independent claim 1 are incorporated in the dependent claim 5.

Accordingly, Applicants respectfully submit that the presently claimed invention is unobvious over the combination of Shizuki et al., Arai et al. and Murata and respectfully request reconsideration and withdrawal of the rejection of claim 5 under 35 U.S.C. § 103.

5. Rejection of Claim 7 under 35 U.S.C. § 103(a)

The Office Action rejects claim 7 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,800,920 ("Umezawa et al.") in view of U.S. Patent No. 4,600,743 ("Shizuki et al.") and U.S. Patent No. 6,528,567 ("Arai et al."). The Office Action states:

> Umezawa discloses polyurethane fiber which contains many useful additives, one of them being antistatic agent/s (column 7, line 64).
>
> Patentee is silent about any specific antistatic agent/s.
>
> Disclosures of Shizuki and Arai are presented earlier.
>
> It would have been obvious to use the antistatic agents taught by Shizuki and Arai in the fiber of Umezawa in order to impart very enhanced level of antistatic property as well durability.

Applicants respectfully traverse the rejection because a *prima facie* case of obviousness has not been established over the independent claim 7 for the same reasons as provided supra over the rejection of claim 1. In particular, the sulfonates taught by Shizuki et al. are used to form the recurring units of polyester used as a fiber-forming thermoplastic polymer and therefore cannot be mixed together with polyoxyalkylene glycol or its derivative as

in the present invention. See Shizuki et al. at col. 4, line 55 to col. 6, line 12. Moreover, one of ordinary skill in the art simply would not have had any motivation to combine Shizuki et al. and Arai et al. to arrive at the presently claimed invention. Therefore, the rejection of the independent claim 7 is similarly traversed over the arguments as provided because all the limitations of the independent claim 7 are also contained in the independent claim 1.

Although Umezawa et al. very generally states that "anti-static agents and the like" can be contained within the polyurethane fibers, Umezawa et al. is nevertheless completely silent as to what those antistatic agents may be. Furthermore, Shizuki et al. and Arai et al. fail to disclose that antistatic properties can be provided to a polyurethane fiber by containing a sulfonate as specified in claim 7 in the polyurethane fiber without deteriorating the polyurethane fiber where the tenacity is 1 g/de or more and the elongation is 400% or more as claimed in claim 7.

Since the specifically claimed limitations of claim 7 are not taught and since there is no motivation or suggestion within any of the references to combine them to arrive at the presently claimed invention, a *prima facie* case of obviousness is not present over claim 7.

Accordingly, Applicants respectfully submit that the presently claimed invention is unobvious over the combination of Shizuki et al., Arai et al. and Umezawa et al. and respectfully request reconsideration and withdrawal of the rejection of claim 7 under 35 U.S.C. § 103.

CONCLUSION

In light of the foregoing, Applicants submit that the application is now in condition for allowance. The Examiner is therefore respectfully requested to reconsider and withdraw the rejection of the pending claims and allow the pending claims. Favorable action with an early allowance of the claims pending is earnestly solicited.

Respectfully submitted,

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